This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: D4956 – 19

Standard Specification for Retroreflective Sheeting for Traffic Control[1]

This standard is issued under the fixed designation D4956; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers flexible, non-exposed glass-bead lens and microprismatic, retroreflective sheeting designed for use on traffic control signs, delineators, barricades, and other devices. This specification does not address inks, overlays, or other imaging methods that may be applied to retroreflective sheeting material to create traffic signs or other devices.

1.2 Although this specification provides photometric requirements for retroreflective sheeting under evaluation, minimum performance requirements of in-service signs or other devices are outside the scope of this document.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.4 The following safety hazards caveat pertains only to the test methods portion, Section 7, of this specification. *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

B209 Specification for Aluminum and Aluminum-Alloy Sheet and Plate
B209M Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric)
B449 Specification for Chromates on Aluminum
D2794 Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
E284 Terminology of Appearance
E308 Practice for Computing the Colors of Objects by Using the CIE System
E808 Practice for Describing Retroreflection
E810 Test Method for Coefficient of Retroreflection of Retroreflective Sheeting Utilizing the Coplanar Geometry
E811 Practice for Measuring Colorimetric Characteristics of Retroreflectors Under Nighttime Conditions
E991 Practice for Color Measurement of Fluorescent Specimens Using the One-Monochromator Method
E1164 Practice for Obtaining Spectrometric Data for Object-Color Evaluation
E1247 Practice for Detecting Fluorescence in Object-Color Specimens by Spectrophotometry
E1347 Test Method for Color and Color-Difference Measurement by Tristimulus Colorimetry
E1349 Test Method for Reflectance Factor and Color by Spectrophotometry Using Bidirectional (45°:0° or 0°:45°) Geometry
E2152 Practice for Computing the Colors of Fluorescent Objects from Bispectral Photometric Data
E2153 Practice for Obtaining Bispectral Photometric Data for Evaluation of Fluorescent Color
E2301 Test Method for Daytime Colorimetric Properties of Fluorescent Retroreflective Sheeting and Marking Materials for High Visibility Traffic Control and Personal Safety Applications Using 45°:Normal Geometry
E3165 Test Method for Nighttime Retroreflected Chromaticity of Retroreflective Sheeting
G7/G7M Practice for Atmospheric Environmental Exposure Testing of Nonmetallic Materials
G113 Terminology Relating to Natural and Artificial Weathering Tests of Nonmetallic Materials
G147 Practice for Conditioning and Handling of Nonmetallic Materials for Natural and Artificial Weathering Tests

[1] This specification is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.38 on Highway Traffic Control Materials.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

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